

I. AMENDMENTS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1 - 45 (Canceled).

47. (Currently Amended) A method for screening a subject for sensitivity to a thymidylate synthase (TS) – directed chemotherapeutic drug, comprising:
~~taking a biological sample of extratumoral, non-metastatic cells from said subject; and~~
determining the genotype of the subject's biological sample at a tandemly repeated 28 base pair sequence in the 5' untranslated region (UTR) of a TS gene in the sample; ~~of a pre-selected gene of the cells;~~ and
correlating said genotype to said sensitivity to TS – directed chemotherapy gene expression to said sensitivity to said chemotherapeutic drug.
48. (Currently Amended) The method of claim 47, wherein said ~~extratumoral biological sample consist of tumor cells or~~ cells are normal cells.
49. (Currently Canceled).
50. (Currently Amended) The method of claim ~~48~~ 47, wherein ~~determining the genotype comprises determining the subject's genotype at a tandemly repeated 28 base pair sequence in the thymidylate synthase (TS) gene's 5' untranslated region (UTR);~~ wherein the genotype is selected from the group consisting of homozygous for a triple repeat of the tandemly repeated sequence, heterozygous for a double repeat and a triple repeat of the tandemly repeated sequence, or homozygous for a double repeat of the tandemly repeated sequence.
51. (Currently Canceled).
52. (Currently Amended) The method of claim ~~54~~ 47, wherein the TS directed drug is a fluoropyrimidine.

53. (Currently Amended) The method of claim 52₁ wherein the fluoropyrimidine is 5-fluorouracil.
54. (Currently Amended) The method of claim 53₁ wherein the subject is a human subject.
55. (Currently Canceled).
56. (Currently Amended) The method of claim ~~55~~ 47₁ wherein said determining the genotype is by analysis of the polymerase chain reaction product of the 5'UTR.
57. (Currently Amended) A kit for use in screening for the effectiveness of thymidylate synthase (TS) TS-directed drug therapy in human subjects, the kit comprising: means for determining a genomic polymorphism, if present, at a tandemly repeated 28 base pair sequence of the 5' UTR of the TS gene; and instructions for correlating the genomic polymorphism of the 5' UTR of the TS gene to sensitivity to TS directed drug therapy.
58. (Currently Amended) The kit of claim 57₁ ~~wherein the means for determining said genomic polymorphism comprises all or some of the~~ further comprising one or more of positive controls, negative controls, reagents, primers, or sequencing markers, and probes for determining the presence or absence of a tandemly repeated 28 base pair nucleic acid sequence that defines the genomic polymorphism in the 5' UTR of the TS gene.
59. (Currently Amended) The kit of claim 58₁ wherein the kit components may be provided in solution or as a liquid dispersion.
60. (Currently Amended) The kit of claim 58₁ comprising DNA tandemly repeated sequences that determine the type of genomic polymorphism of the TS gene in Tris-EDTA buffer solution kept at about 4°C.
61. (Currently Amended) The method of claim 47₁ wherein the subject's biological sample fluid comprises ~~extratumoral cells are isolated from~~ a body fluid.
62. (Currently Amended) The method of claim 61₁ wherein the body fluid is selected from the group consisting of blood and semen.

63. (Currently Amended) The method of claim ~~64~~ 47, wherein the biological sample is selected from the group consisting of ~~extratumoral cells are~~ peripheral blood cells.

64. (Currently Amended) The method of claim ~~64~~ 47, wherein the biological sample is selected from the group consisting of ~~extratumoral cells are selected from~~ liver cells, skin cells, blood cells, hair cells and semen cells.

65. (Currently Amended) The method of claim 61, wherein the biological sample is ~~cells are live, dead or preserved~~.

66. (Currently Amended) The method of any one of claims 61 to 65, wherein the extratumoral cells are normal cells.

67. (Currently Amended) The method of claim 47, wherein the subject suffers from a cancer selected from the group consisting of colorectal cancer, gastric cancer and liver cancer.